

XII. DESCRIPTION OF A NEW GENUS AND SPECIES
OF DEEP WATER GEMPYLOID FISH, DIPLO-
GONURUS MADERENSIS.

BY ADOLFO CESAR DI NORONHA.¹

Family GEMPYLIDÆ.

Diplogonurus Noronha, gen. nov.

Body elongate, fusiform, covered with small scales. Head elongate. Teeth few, robust, pointed, in a single row on the jaws, vomer, and palatine. Gill-openings very large. The four gill-arches with small teeth. Pseudobranchiæ present. First dorsal with long base continuous with the second, which is opposed to the anal. Ventrals present. Finlets of dorsal and anal numerous. Belly not trenchant; trunk of tail with a keel on each side. Lateral line obsolete; scales small, ctenoid, surrounded by other scales with pores and tubes.

Diplogonurus maderensis Noronha, sp. nov.

Body fusiform, little compressed, the height of the trunk little greater than its thickness; head and eye large; head four times in total length; eye five in head, its horizontal diameter nearly equal to the vertical, which is little less than the interorbital space; profile straight, lightly convex between the eyes; anterior nostril oval, back of a vertical slit; mouth not reaching front margin of eye; posterior extremity of pre-maxillary not reaching to opposite middle of orbit;



Fig. 1. Head of *Diplogonurus maderensis* Noronha. Length of head, 20 cm.; diameter of orbits, 4 cm. Weight of specimen, 6 kilos.

upper jaw sharp, lower vertically truncate at tip; pre-maxillary broad in front, growing narrow behind; maxillary narrow in front, broadening behind; teeth in simple parallel rows on the border of the maxillary, acute and recurved, the exterior inclining toward the apex of the

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mouth, the interior more recurved; teeth of moderate length, those of the lower jaw well spaced, the space about equal to the distance between four teeth; the teeth along edge of upper jaw also spaced, but smaller than lower teeth, diminishing backward, those of the middle part of each side of the jaw about as long as those on vomer and palatines; vomerine teeth forming a crescent; palatine teeth in a long line on either side, advancing to the front of the head of the vomer; pharyngeals with teeth of the same fashion, the upper larger than the inferior; tongue coal-black, large, flat, unarmed, and nearly square, its anterior angles rounded. Cheeks and opercles covered with small scales, thin, nearly circular, mostly cycloid, reaching forward to below the eye; jaws smooth, naked, as are the snout and interorbital space; scales of trunk nearly circular, thin and flexible, with a central nucleus, and edges scarcely pectinate, a small portion of the edge free and furrowed, showing a large number of concentric circuli, very fine. The lateral furrows or radii are mostly parallel, not converging, nor reaching the nucleus. Among these simple normal scales are a great number of others, tubular and emarginate, more rigid, distributed everywhere, if I may judge from the position of the skin conserved; tubular scales apparently generally distributed, seeming by their form to have the same rôle as the scales of the lateral line of ordinary fishes. The general color of the body is blackish brown, with a small darker spot corresponding to each normal scale.

MEASUREMENTS OF TYPE

Weight.....	6 kilos	Tongue.....	30 mm.
Total length.....	80 cm.	Teeth of mandible.....	13 + 14 = 27
Head.....	198 mm.	Pre-maxillary.....	37 on each side
Eye.....	42 mm.	Teeth on vomer.....	11
Teeth on palatines.....		18 on each side	

To what family does this genus belong? In spite of its affinities with *Gempylus* it seems to me to constitute a new family, *Diplogonuridæ*, as none of the *Gempylidæ* have a keel on the trunk of the tail. The fishermen of Madeira call it "*Escolar de Natura*," recognizing justly its relation to the common *Escolar*, *Ruvvetus pretiosus* Cocco, from which it is distinguished at first by its spiny covering, the higher and deeper head, and especially by the presence of an abdominal keel, and the absence of keel on the tail.

The two species are captured from the surface down to great depths, but it seems that only the young are pelagic. It appears also that *Diplogonurus* is caught at a greater depth than the "*Escolar*," sometimes near the bottom, probably as a rule at a depth of 800 yards. In last September, besides the type example from Cama

de Lobos, there was caught one of these fishes in singular condition, measuring a little less than a meter. This was on the surface of the sea after a great storm, near the Island of Porto Santo, where the fish, separated from its habitat, was about collapsed. It was recognized only with difficulty by the fishers of Porto Santo, a fact which proves its rarity. In the same place more than twenty years ago a boy bathing caught in his hands a little living fish of *Tetragonurus cuvieri* Risso which species likewise is called "Escolar de Natura." This specimen, like the larger one, seems to have been separated from its true habitat. This specimen is still in my collection. Two other individuals of the new species have been presented lately in the market of Cama de Lobos; one, very young, weighed little more than two kilograms, while the other weighed twenty-two. Afterwards fishermen found examples weighing thirty kilograms or more. The flesh is said to be white and extremely fine-flavored, like that of *Ruvettus*, but excessively fat. This fact renders the flesh of both extremely laxative, for which reason they are preferred as food when salted.